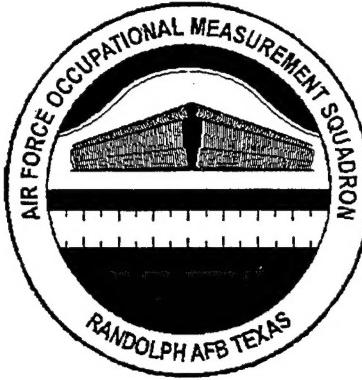


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UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

DIAGNOSTIC IMAGING

AFSC 4R0X1/AB/C

AFPT 90-4R0-089

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PREFACE

This report presents the results of an Air Force Occupational Survey of the Diagnostic Imaging career ladder, Air Force Specialty Code (AFSC) 4R0X1/A/B/C. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for the use of operations and training officials.

The survey instrument was developed by Chief Master Sergeant Lionel Robertson, Inventory Development Specialist, with computer programming support furnished by Mrs. Jeanie C. Guesman. Mr. Richard G. Ramos provided administrative support. Second Lieutenant Karla K. Rudert, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands (MAJCOM), and other interested training and management personnel. Additional copies are available upon request to AFOMS, Attention: Chief, Occupational Analysis Flight, 1550 5th Street East, Randolph AFB Texas 78150-4449 (DSN 487-6623).

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SUMMARY OF RESULTS

1. **Survey Coverage:** The Diagnostic Imaging career ladder was surveyed to evaluate changes in the AFSC 4R0X1/A/B/C career ladder and obtain task and equipment data for use in evaluating training programs. Results are based on responses from 817 members (73 percent of the assigned population). All MAJCOMs are proportionately represented.
2. **Specialty Jobs:** Three clusters and 7 independent jobs were identified in the specialty: Standard Radiology Cluster, Management/Supervision Cluster, Instructor Cluster, Mammography Job, Computed Tomography Job, Magnetic Resonance Imaging (MRI) Job, Nuclear Medicine Job, Angiography Job, Ultrasonography Job, and Supply and Logistics Job. The Nuclear Medicine Job, Ultrasonography Job, and MRI Job are performed primarily by members with the A, B, and C shreds, respectively.
3. **Career Ladder Progression:** Progression in the career ladder follows a typical pattern of technical job focus at the 3- and 5-skill level, and greater emphasis on supervision at the 7-skill level. Nine-skill level members and chief enlisted managers devote all their duty time to managerial functions.
4. **Training Analysis:** Because of the diversity of the career ladder, the Specialty Training Standard (STS) was reviewed using specialty job data. STS items with matched tasks were well supported by survey data. The Plan of Instruction (POI) was also well supported. There are a relatively high number of STS performance coded items with no matched tasks. Training personnel and subject-matter experts (SMEs) should review the unsupported and unmatched STS and POI learning objectives to determine if inclusion in future revisions is warranted.
5. **Job Satisfaction Analysis:** Overall, AFSC 4R0X1/A/B/C members appear to be more satisfied with their jobs than members of a comparative sample of medical career ladder personnel. Furthermore, members of the current sample appear more satisfied with their jobs than personnel surveyed in 1992 (excluding Nuclear Medicine personnel). Job satisfaction data of specific career ladder jobs show members find their work interesting and feel their talents and training are being properly used. Respondents in the Nuclear Medicine Job, Angiography Job, Instructor Job, and Logistics and Supply Job expressed less sense of accomplishment from their work than their counterparts.
6. **Implications:** Currently, members are being reclassified so their shred matches the work they perform. Analysis of career ladder documents indicates the STS and POI are supported by survey data. Training personnel and SMEs should review the unsupported and unmatched STS and POI items to determine if inclusion in future revisions is warranted.

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**OCCUPATIONAL SURVEY REPORT (OSR)
DIAGNOSTIC IMAGING
(AFSC 4R0X1/A/B/C)**

INTRODUCTION

This is a report of an occupational survey of the Diagnostic Imaging (AFSC 4R0X1/A/B/C) career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). The current Diagnostic Imaging career ladder was created in 1996 with the merger of AFSC 4R0X1 (Radiology) and AFSC 4R0X2 (Nuclear Medicine). This is the first survey conducted on this AFSC since the merger. Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs. The last OSR published for the AFSC 903X0 (Radiologic Career Ladder) was in September 1992. The last OSR which included Nuclear Medicine was a combined AFSC 903X0, 904X0, 909X0 (Radiologic, Medical Laboratory and Nuclear Medicine) study published in December 1978.

Background

As described in the AFMAN 36-2108 *Specialty Description*, Diagnostic Imaging members operate equipment to produce diagnostic images and assist a radiologist or physician with special procedures. Members prepare equipment and patients for diagnostic studies and therapeutic procedures, perform technical and administrative radiology activities, ensure health protective measures are established and employed, and assist the radiation oncologist.

Personnel operate fixed and portable radiographic equipment to produce routine diagnostic medical images. They use specialized equipment to perform nuclear medicine, mammography, ultrasound, computerized tomography, and magnetic resonance imaging (MRI). Members assist physicians with fluoroscopic, interventional, and special examinations.

They also assist radiation oncologists in radiation treatment of disease. They perform and supervise general diagnostic imaging activities such as mixing film processing solutions, loading and unloading film holders, and reproducing images. Members establish and maintain standards, guidelines, and practices to ensure quality standards are met. They plan, organize, and supervise diagnostic imaging activities.

The technical training school for Diagnostic Imaging Apprentices consists of 2 phases. Phase I, J3AQR4R031 000, is conducted at Sheppard AFB TX and lasts for 70 days. It provides training on the atomic theory, basic electricity, production of X-rays, radiographic technique, radiographic film and chemical processing, radiographically oriented anatomy and physiology,

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operation of fixed and mobile radiologic equipment, routine and special radiographic positioning, practice and theory of special radiographic techniques, and introduction to special radiographic procedures and the associated equipment.

Phase II, J5ABO4R031 001, is located at designated hospitals and lasts for an additional 190 days. It provides practical clinical training and experience in nursing, orthopedic, and surgical procedures; department administration; film processing and exposure techniques; bedside and surgical radiographic procedures; night emergency call; and proficiency training in radiologic technology and radiation protection.

Members in paygrade E-4 or above, holding the 5-skill level and eligible for testing by ARRT, may attend the Nuclear Medicine Journeyman or Diagnostic Ultrasound Journeyman courses. In order to qualify for the Nuclear Medicine Journeyman course, members must also have 36 months retainability and be eligible to retrain according to AFI 36-2204. Members desiring to attend the Diagnostic Ultrasound course must be recommended by the Chairman, Department of Radiology.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Air Force Personnel Test 90-4R0-089, dated March 1996. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSRs. The preliminary task list was refined and validated through personal interviews with 23 subject-matter experts (SMEs) at the technical training location and at the following installations:

BASE	UNIT VISITED
Sheppard AFB TX	882 TSS
Sheppard AFB TX	82 MDG/SGSAR
Lackland AFB TX	59 MEDW/PSR
Wilford Hall Medical Center	
Randolph AFB TX	12 MDG/SGSAR
Tinker AFB OK	72 MDG/SGSAR

The resulting JI contains a comprehensive listing of 742 tasks grouped under 18 duty headings, and a background section requesting such information as grade, major command (MAJCOM) assigned, organizational level, job title, functional area, the type of medical facility assigned, the work schedule, the average number of days "On Call" per month, the average number of days report to duty while "On Call," equipment used or operated, and forms used.

Survey Administration

Base training offices at operational bases worldwide administered the inventory to all eligible AFSC 4R0X1/A/B/C personnel. Members eligible for the survey consisted of the total assigned population excluding hospitalized personnel, personnel in transition for a permanent change of station, personnel retiring within the time the inventories were administered to the field and personnel in their job less than 6 weeks. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX.

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each individual rated the tasks checked on a 9-point scale showing relative time spent on that task compared to other tasks performed. The ratings ranged from 1 (very small amount of time spent) to 9 (very large amount of time spent).

To determine relative time spent for each task, all incumbent's ratings are assumed to account for 100 percent of job time. Each individual task rating is divided by the total of all task ratings and then multiplied by 100 to provide a relative percentage of time spent on each task.

Survey Sample

Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 4R0X1/A/B/C (then 4R0X1 and 4R0X2) personnel as of October 1995. The 817 military respondents in the final sample represent 73 percent of the total assigned personnel and 83 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 4R0X1/A/B/C personnel. The survey sample is considered to be a satisfactory representation of the overall career ladder population.

TABLE 1
COMMAND DISTRIBUTION OF 4R0X1/A/B/C PERSONNEL

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AETC	33	35
AMC	17	18
ACC	16	18
AFMC	18	16
PACAF	5	3
USAFE	4	4
USAFA	2	3
AFSPC	3	3
OTHER	2	1

TOTAL ASSIGNED = 1,115
TOTAL SURVEYED = 990
TOTAL IN SURVEY SAMPLE = 817
PERCENT OF ASSIGNED IN SAMPLE = 73%
PERCENT OF SURVEYED IN SAMPLE = 83%

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

GRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 to E-3	22	19
E-4	33	37
E-5	26	27
E-6	10	9
E-7	7	7
E-8	1	1
E-9	*	0

* Less than 1 percent

Task Factor Administration

In addition to completing the JI, selected senior AFSC 4R0X1/A/B/C personnel completed a training emphasis (TE) or task difficulty (TD) booklet. These booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 64 senior NCOs who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel, and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. Interrater agreement for these 64 raters was acceptable. The average TE rating was 2.21, with a standard deviation of 2.09. Any task with a TE rating of 4.30 or above is considered to have high TE.

4R0X1/A/B/C CAREER LADDER JOBS (N=817)

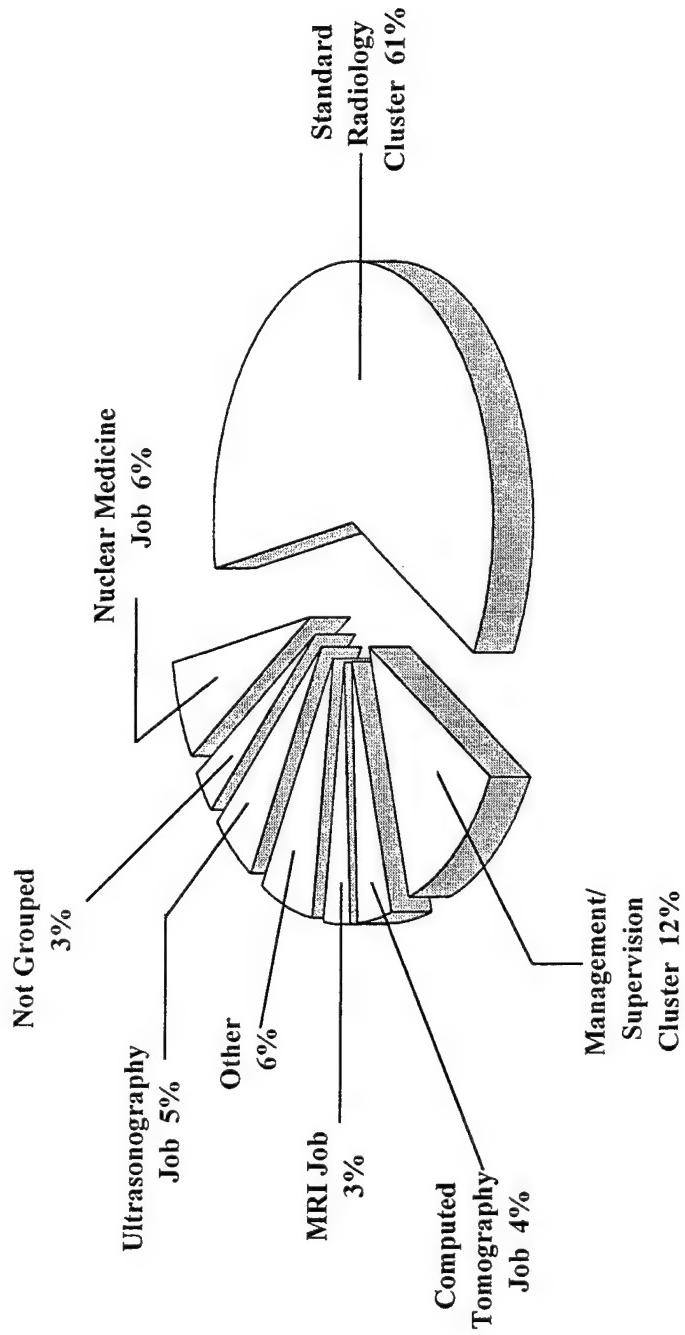


FIGURE 1

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 65 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction for entry-level jobs.

SPECIALTY JOBS (Career Ladder Structure)

The first step in the analysis process is to identify the structure of the career ladder in terms of tasks performed and the relative amount of time spent on the tasks. The Comprehensive Occupational Data Analysis Program (CODAP) creates an individual job description for each respondent. A hierarchical clustering program then compares all individual job descriptions, locates those descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group, or forms new groups based on similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the *Job*. When two or more jobs have a substantial degree of similarity in tasks performed and time spent performing tasks, they are grouped together and identified as a *Cluster*. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Structure analysis identified three clusters and seven independent jobs (IJ) in the survey sample (Figure 1). A listing of the clusters and IJs is provided below. The stage (ST) number shown beside each title is a reference to computer printed information; the number of personnel (N) in each stage is also shown.

- I. STANDARD RADIOLOGY CLUSTER (ST037, N=501)
- II. MANAGEMENT/SUPERVISION CLUSTER (ST029, N=96)
- III. MAMMOGRAPHY JOB (ST048, N=18)

- IV. COMPUTED TOMOGRAPHY JOB (ST060, N=32)
- V. MRI JOB (ST080, N=22)
- VI. NUCLEAR MEDICINE JOB (ST072, N=49)
- VII. ANGIOGRAPHY JOB (ST047, N=16)
- VIII. ULTRASONOGRAPHY JOB (ST044, N=37)
- IX. INSTRUCTOR CLUSTER (ST033, N=7)
- X. SUPPLY AND LOGISTICS JOB (ST155, N=5)

The respondents forming these jobs account for 97 percent of the survey sample. The remaining 3 percent did not fall into one of these jobs. Examples of job titles for these people include radiologic technician, radiologic apprentice, quality assurance monitor, health physics technician, radiation therapist, and NCOIC radiation oncology.

Group Descriptions

The following paragraphs contain brief descriptions of the clusters and jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these specialty jobs. Selected background data for these jobs are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

I. STANDARD RADIOLOGY CLUSTER (ST037, N=501). This represents the core work of the specialty as 61 percent of the survey respondents are in this cluster. Members of the cluster perform an average of 129 tasks and spend 39 percent of their duty time performing standard radiographic exams of all parts of the body. These are done in the normal radiologic laboratory, as well as in emergency rooms. Members have to position patients properly and determine exposures for the various tissue densities. Members of this cluster are distinguished by the time they spend performing the following tasks:

- perform ankle radiographic examinations
- perform hand radiographic examinations
- perform foot radiographic examinations
- perform finger radiographic examinations
- perform cervical spine radiographic examinations
- perform forearm radiographic examinations
- perform hip radiographic examinations

- perform elbow radiographic examinations
- perform chest radiographic examinations
- perform knee radiographic examinations

Most members of the cluster are involved with the core work of the career ladder, performing standard radiographic examinations. There are, however, two jobs identified in the cluster that are performed by smaller numbers of members. There are Phase II instructors who perform a number of training tasks along with the standard radiologic examinations and other personnel who performed both standard radiographic exams and mammography.

As shown in Table 4, over half the members in the Standard Radiology Cluster are in their first enlistment and range in paygrade from airmen just out of training through E-7. Over a third hold the 3-skill level, while more than half hold the 5-skill level. Very few are senior in skill level or paygrade.

II. MANAGEMENT/SUPERVISION CLUSTER (ST029, N=96). As with nearly all specialties, these are members who spend over half their time performing management, supervisory, and general administrative activities. Most consider themselves NCOICs or Superintendents. They perform the highest average number of tasks (177), and 95 percent of the members reported having supervisory responsibility. The following are tasks which distinguish members of this cluster:

- establish performance standards for subordinates
- counsel subordinates concerning personal matters
- write performance reports or supervisory appraisals
- conduct general meetings, such as staff meetings, briefings, conferences, or workshops
- assign personnel to work areas or duty positions
- establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)
- develop or establish work methods or procedures
- develop or establish work schedules
- coordinate radiology activities with other medical facility sections

Most members of the cluster have a rather broad job which includes a mixture of technical radiographic and traditional supervisory tasks. Most report the job title of NCOIC or Superintendent. A small group of slightly more senior members focus on only a few supervisory and management tasks and are assigned to a wing-level position.

Figures in Table 4 show these are the most senior members of the specialty, averaging nearly 16 years time in service. They hold the 7-, 9-, and CEM skill levels. They range in paygrade from E-5 through E-9.

III. MAMMOGRAPHY JOB (ST048, N=18). This job is performed by relatively few nonshred members of the specialty. The work is far more focused than the General Radiologic Job as members perform an average of only 78 tasks. What distinguishes this job is the time members spend performing only mammographic activities. This is clearly seen by the following tasks members of this job spend most time performing:

- perform mammograms
- complete magnification radiographs for mammographies
- perform mammographic microcalcification studies
- complete radiographs of mammographic biopsy specimens
- perform coned-down mammographic views
- complete radiographs during mammographic localizations
- complete radiographs during mammographic biopsies

While collectively they average nearly 7 years service, 40 percent are in their first enlistment. Most are in paygrades E-4 and E-5 and hold the 5-skill level.

IV. COMPUTED TOMOGRAPHY JOB (ST060, N=32). The work activities of this specialized job are focused mainly on performing Computed Tomography (CT) activities. However, members also spend time performing such general medical service tasks as interviewing and monitoring patients and preparing instruments. These activities account for the average of 117 tasks performed. The primary focus of the job, however, is clearly shown by the following CT-specific tasks members spend most time performing:

- perform CT brain scans
- perform CT abdominal scans
- perform CT chest scans
- administer IV contrast media during CT scans
- adjust CT scanner gantries
- perform CT paranasal sinus scans
- calculate contrast media dosages for CT scans
- record CT images on film
- perform CT temporal bone scans

This job is performed by members of moderate experience as nearly all hold the 5- or 7-skill level and are in paygrades E-4 and E-5. Only one-fourth report being in their first enlistment.

V. MRI JOB (ST080, N=22). This job is distinguished because the members spend two-thirds of their time performing Magnetic Resonance Imaging activities, more time than members of any other job. This job also includes a fair amount of management and supervisory responsibilities as over half of the members report being in a supervisory role. Representative tasks for this job include the following:

- perform MR brain scans, other than pediatric brain scans
- screen patients for metallic implants prior to MR scans
- perform MR lumbar spine scans
- record MR images on film
- select radio frequency (RF) coils for exams
- perform MR archive procedures
- brief patients concerning MR examination and preparation
- procedures

Presently, only 3 of the 22 respondents in the job have the C-shred. The work is performed by fairly senior personnel as members in this job have an average of over 10 years in the service; only 19 percent are in their first enlistment. Members are primarily E-4s, E-5s, and E-6s.

VI. NUCLEAR MEDICINE JOB (ST072, N=49). Members with this job were very clearly distinguished as they were essentially the only ones who performed tasks in the Nuclear Medicine duty. The job also includes performing quality control or assurance activities. The focus of the work is shown by the following tasks which distinguish the members with the job:

- perform whole body scan imagings
- perform thyroid imagings
- perform bone scan imagings, other than whole body
- perform pulmonary perfusion imagings
- perform thyroid uptake countings
- dispose of radioactive materials
- calculate nuclear medicine radiopharmaceutical doses
- perform gamma camera daily uniformity floods
- perform gated blood pool imagings
- perform gamma camera high count uniformity floods

Members in this job average over 11 years time in service. No members are in their first enlistment. All have the A-shred, most are in paygrade E-4 and E-5, and over half indicate they have supervisory responsibility.

VII. ANGIOGRAPHY JOB (ST047, N=16). Members in this specialized job spend 75 percent of their time performing specific angiographic activities and general services, such as setting up equipment and connecting monitoring devices to patients. The job is rather focused as personnel perform an average of 72 tasks. Representative tasks for this job include:

- assist in performing arch and carotid angiographies
- set up biplane angiography equipment
- assist in performing abdominal angiographies
- set up radiology step tables for runoff procedures
- assist in performing extremital angiographies, such as peripheral
- record digital angiographic procedures on film
- perform digital subtraction angiographies
- assist in performing angioplasties
- assist in performing percutaneous biliary drainage procedures

Members with this job average 62 months service, 44 percent are in their first enlistment, and most hold the 5-skill level and are in paygrade E-4.

VIII. ULTRASONOGRAPHY JOB (ST044, N=37). This job represents the fourth specialized modality that a relatively small number of respondents perform. The job involves spending 65 percent of duty time performing specific ultrasonography activities. As with the other specialized modality jobs, the work is rather specialized as reflected by the average of 72 tasks performed. The following are representative tasks included in this job:

- perform renal ultrasonographies
- disinfect ultrasound equipment and supplies
- perform color Doppler ultrasonographies
- perform thyroid ultrasonographies
- perform testicular ultrasonographies
- brief patients concerning ultrasonography examination and preparation procedures
- perform biliary system ultrasonographies
- perform aortic ultrasonographies

Members in this job average almost 9 years time in service, and only 16 percent are in their first enlistment. They are primarily in paygrade E-4 and E-5. Nearly half perform supervisory responsibilities. While personnel performing the Ultrasound function should have the B-shred, only 27 percent of the respondents doing the work hold the B-shred. Most in the job are 4R051 and 4R071 "slicks".

IX. INSTRUCTOR CLUSTER (ST033, N=7). Members in this cluster spend nearly 80 percent of their time performing training and management and supervisory activities. The radiographic exams they perform are primarily for training purposes. The job is rather focused as personnel in this job perform an average of 34 tasks, the second lowest average number of tasks performed for a job in this career ladder. Some members in this cluster are Phase II instructors, but most are Phase I instructors assigned to Sheppard AFB TX. Other Phase II instructors are represented in the Standard Radiology Cluster because they indicated they spend more time performing standard radiographic exams than instructing personnel in how to perform the exams. Representative tasks for this cluster include:

- personalize lesson plans
- administer or score tests
- develop lesson plans
- conduct formal course classroom training, other than OJT
- write test questions
- develop training materials or aids
- counsel trainees on training progress
- inspect training materials or aids for operation or suitability
- evaluate progress of trainees

Members in the Instructor Cluster average more than 10 years time in service. Members are primarily in paygrades E-4 through E-6.

X. SUPPLY AND LOGISTICS JOB (ST155, N=5). Members with this job are essentially working outside the specialty as they spend 60 percent of their time performing general supply and equipment activities. The job includes an average of only 31 tasks, the lowest average number of tasks performed for any job in this career ladder. All but one member perform a supervisory role. The nontechnical nature of the work is shown by the following tasks members spend most time performing:

- coordinate supply-related matters with appropriate agencies
- store equipment, tools, parts, or supplies
- initiate letters of justification for supply-related matters
- inventory equipment, tools, parts, or supplies

maintain medical supply shopping guides
coordinate orders or requests with facility management personnel
research information in supply catalogs or indexes
identify and report equipment or supply problems
initiate requisitions for equipment, tools, parts, or supplies

Members in this job are somewhat more senior, as they average over 14 years in the service.
Paygrades of members range from E-4 to E-7.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	STANDARD RADIOLOGY (ST037) (N=501)	MGT/ SUPERVISION (ST029) (N=96)	MAMMO (ST048) (N=18)	CT (ST060) (N=32)	MRI (ST080) (N=22)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	5	47	9	8	13
B PERFORMING TRAINING ACTIVITIES	2	8	1	2	3
C PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	9	13	20	9	7
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	5	3	4	3
E PERFORMING MAMMOGRAPHIC ACTIVITIES	1	*	15	*	*
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE ACTIVITIES	5	4	20	2	2
G PROCESSING RADIOGRAPHIC FILM	6	3	12	4	4
H PERFORMING GENERAL SERVICES	8	2	10	15	8
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	39	9	2	2	*
J PERFORMING OR PARTICIPATING IN BEDSIDE, SURGICAL RADIOGRAPHY, AND FLUOROSCOPY	10	1	*	1	0
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	9	2	1	2	*
L PERFORMING COMPUTED TOMOGRAPHY (CT) ACTIVITIES	1	*	0	47	0
M PERFORMING MAGNETIC RESONANCE IMAGING (MRI) ACTIVITIES	*	*	0	2	57
N PERFORMING ANGIOGRAPHIC ACTIVITIES	*	0	0	*	0
O PERFORMING ULTRASONOGRAPHY ACTIVITIES	1	2	3	*	0
P PERFORMING RADIATION THERAPY	*	*	0	0	0
Q PERFORMING NUCLEAR MEDICINE ACTIVITIES	0	0	0	*	0
R PERFORMING MEDICAL READINESS ACTIVITIES	2	3	5	3	3

* Denotes less than .5 percent

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

	NUCLEAR MEDICINE (ST072) (N=49)	ANGIO (ST047) (N=16)	ULTRA-SOUND (ST044) (N=37)	INSTRUCTOR (ST026) (N=14)	LOGISTICS & SUPPLY (ST155) (N=5)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	12	7	10	30	31
B PERFORMING TRAINING ACTIVITIES	2	1	5	49	1
C PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	9	4	6	3	5
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4	4	2	1	60
E PERFORMING MAMMOGRAPHIC ACTIVITIES	0	0	2	1	0
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE ACTIVITIES	21	1	2	6	0
G PROCESSING RADIOGRAPHIC FILM	2	3	4	6	0
H PERFORMING GENERAL SERVICES	10	12	4	*	0
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	*	*	1	2	0
J PERFORMING OR PARTICIPATING IN BEDSIDE, SURGICAL RADIOGRAPHY, AND FLUOROSCOPY	0	*	*	*	0
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	*	4	*	1	0
L PERFORMING COMPUTED TOMOGRAPHY (CT) ACTIVITIES	*	*	0	0	0
M PERFORMING MAGNETIC RESONANCE IMAGING (MRI) ACTIVITIES	0	0	0	0	0
N PERFORMING ANGIOGRAPHIC ACTIVITIES	0	63	0	0	0
O PERFORMING ULTRASONOGRAPHY ACTIVITIES	0	*	65	2	0
P PERFORMING RADIATION THERAPY	*	0	0	0	0
Q PERFORMING NUCLEAR MEDICINE ACTIVITIES	38	0	0	0	0
R PERFORMING MEDICAL READINESS ACTIVITIES	3	*	2	*	3

* Denotes less than .5 percent

TABLE 4

SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	STANDARD RADIOLOGY	MGT/ SUPER	MAMMO	CT	MRI	NUCLEAR	ANGIO	ULTRA- SOUND	INSTRUCTOR	SUPPLY
NUMBER IN GROUP	501	96	18	32	22	49	16	37	14	5
PERCENT OF SAMPLE	61%	12%	2%	4%	3%	6%	2%	4%	2%	1%
DAFSC DISTRIBUTION (PERCENT RESPONDING)										
4R031	37%	2%	22%	9%	0	0	19%	5%	0	20%
4R031B	0	0	0	3%	0	0	0	5%	0	0
4R051	53%	23%	72%	75%	59%	0	75%	57%	71%	20%
4R051A	0	0	0	0	0	0	0	0	0	0
4R051B	2%	4%	0	0	0	0	0	19%	0	0
4R051C	0	0	0	3%	9%	0	0	0	0	0
4R071	6%	64%	6%	10%	27%	0	6%	11%	21%	60%
4R071A	0	0	0	0	0	0	0	0	0	0
4R071B	0	0	0	0	0	0	0	3%	0	0
4R071C	0	0	0	0	5%	0	0	0	0	0
4R090/00	0	7%	0	0	0	0	0	0	0	0
PAYGRADE DISTRIBUTION (PERCENT RESPONDING)										
AIRMAN	2%	11%	0	0	0	0	13%	0	0	0
E-4	42%	1%	61%	66%	27%	24%	69%	46%	29%	20%
E-5	22%	23%	22%	25%	50%	53%	19%	41%	50%	20%
E-6	5%	26%	6%	6%	14%	16%	0	14%	21%	20%
E-7	1%	42%	0	3%	9%	6%	0	0	0	40%
E-8	0	4%	0	0	0	0	0	0	0	0
E-9	0	2%	0	0	0	0	0	0	0	0
AVERAGE TASKS PERFORMED	129	177	78	117	102	119	62	72	34	31
AVERAGE MONTHS TAFMS	69	191	82	88	124	137	81	106	122	175
PERCENT IN FIRST ENLISTMENT	51%	3%	40%	25%	19%	0	44%	16%	7%	20%
PERCENT SUPERVISING	29%	95%	39%	44%	64%	55%	25%	46%	29%	80%

Comparison of Current Jobs to Previous Survey Findings

The results of the specialty job analysis were compared to those of the last AFSC 4R0X1 (903X0) Radiologic OSR published in 1992. As shown in Table 5, all jobs in the previous survey except the Radiologic Therapy Job were identified in the current study. Two additional jobs--Mammography and Supply and Logistics--were not previously identified.

TABLE 5

JOB SPECIALTY COMPARISONS BETWEEN CURRENT AND PREVIOUS SURVEYS

<u>CURRENT SURVEY</u>	<u>1992 SURVEY</u>
Standard Radiology Cluster	General Radiology Cluster
Management/Supervision Job	Superintendent Job
Mammography Job	Not Identified
Computed Tomography Job	Computerized Tomography Job
MRI Job	Magnetic Resonance Imaging
Nuclear Medicine Job	Not Surveyed
Angiography Job	Angiography Job
Ultrasonography Job	Ultrasound Job
Instructor Job	Instructors Job
Supply and Logistics Job	Not Identified
Not Identified	Radiologic Therapy Job

Summary

The core of the career ladder work is represented by tasks performed by members of the Standard Radiology Cluster. The specialized modalities are represented by the other jobs performed by smaller numbers of respondents. As expected, members with the A-shred were performing the Nuclear Medicine activities. What was unexpected was the number of "slick"

members performing the B- and C-shred Ultrasound and MRI jobs and the number of members with shreds doing standard radiographic duties. This may be because the shred designations had been assigned only shortly before the survey was conducted.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed between skill level members. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Specialty Description* and the Career Field Education and Training Plan, reflect what career ladder personnel are actually doing in the field.

The distribution of AFSC 4R0X1/A/B/C skill-level groups across career ladder jobs is displayed in Table 6. Table 7 offers another perspective by displaying the relative percent time spent on each duty across the skill level groups. Almost all 3-skill level "slick" members perform the Standard Radiology Job, while only one AFSC 4R031B member performed the CT job. Senior members in the career ladder specialize in the various modalities and have increasing supervisory and management responsibilities.

Skill-Level Descriptions

At the time of this survey, only a few AFSC 4R0X1/A/B/C personnel had been designated with the appropriate shred following the merger. Therefore, only small numbers of members with the three suffixes appeared in the sample. Because of this, the shreds will only be briefly discussed at the 5-skill level.

DAFSC 4R031. Three-skill level respondents constitute 25 percent of the survey sample. Most perform the core work represented by the Standard Radiology Cluster and spend the majority of their time performing standard radiographic exams. They also perform or participate in special radiographic procedures and in bedside, surgical radiography, and fluoroscopy. Representative tasks performed by 3-skill level personnel are shown in Table 8.

DAFSC 4R051. Almost half the members in the survey sample hold the shredless 5-skill level. While the majority of 4R051 members perform the work of the Standard Radiology Cluster, they also are involved with some of the more specialized procedures and modalities. Representative tasks performed by 4R051/A/B/C personnel are shown in Table 9. Table 10 shows the tasks

TABLE 6

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	<u>4R031 (N=203)</u>	<u>4R031B (N=5)</u>	<u>4R051 (N=399)</u>	<u>4R051A (N=42)</u>	<u>4R051B (N=23)</u>	<u>4R051C (N=3)</u>	<u>4R071 (N=19)</u>	<u>4R071A (N=14)</u>	<u>4R071B (N=1)</u>	<u>4R071C (N=1)</u>	<u>4R090/00 (N=7)</u>
STANDARD RADIOLOGY	92	40	67	2	52	0	27	0	0	0	0
MGT/SUPERVISION	1	0	6	0	17	0	51	0	0	0	100
MAMMOGRAPHY	2	0	3	0	0	0	*	0	0	0	0
CT	1	20	6	0	0	33	3	0	0	0	0
MRI	0	0	3	0	0	67	5	0	0	100	0
NUCLEAR MEDICINE	0	0	90	0	0	0	79	0	0	0	0
ANGIOGRAPHY	1	0	3	0	0	0	*	0	0	0	0
ULTRASOUND	1	40	5	0	31	0	3	0	100	0	0
INSTRUCTOR	0	0	3	0	0	0	3	7	0	0	0
LOGISTICS/SUPPLY	*	0	*	0	0	0	3	0	0	0	0
NOT GROUPED	1	0	0	8	0	0	5	14	0	0	0

TABLE 7

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

	4R031 (N=203)	4R031B (N=5)	4R051 (N=399)	4R051A (N=42)	4R051B (N=23)	4R051C (N=3)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	3	9	7	11	11
B PERFORMING TRAINING ACTIVITIES	*	*	4	1	2	*
C PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	8	7	9	9	9	10
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1	1	3	3	3	7
E PERFORMING MAMMOGRAPHIC ACTIVITIES	*	*	1	*	1	0
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE ACTIVITIES	4	2	5	23	4	5
G PROCESSING RADIOGRAPHIC FILM	6	9	6	2	6	4
H PERFORMING GENERAL SERVICES	8	9	7	12	5	10
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	41	17	26	1	19	3
J PERFORMING OR PARTICIPATING IN BEDSIDE, SURGICAL RADIOGRAPHY, AND FLUOROSCOPY	12	10	6	*	4	*
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	9	3	6	*	4	2
L PERFORMING COMPUTED TOMOGRAPHY (CT) ACTIVITIES	2	7	4	*	*	6
M PERFORMING MAGNETIC RESONANCE IMAGING (MRI) ACTIVITIES	*	0	2	*	0	40
N PERFORMING ANGIOGRAPHIC AND INTERVENTIONAL ACTIVITIES	2	0	2	0	*	*
O PERFORMING ULTRASONOGRAPHY ACTIVITIES	1	31	5	0	27	0
P PERFORMING RADIATION THERAPY	0	0	*	*	0	0
Q PERFORMING NUCLEAR MEDICINE ACTIVITIES	0	0	*	38	0	0
R PERFORMING MEDICAL READINESS ACTIVITIES	2	*	3	3	5	1

* Denotes less than 1 percent

TABLE 7 (CONTINUED)

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

	4R071 (N=119)	4R071A (N=14)	4R071B (N=1)	4R071C (N=1)	4R090/00 (N=7)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	35	33	30	32	68
B PERFORMING TRAINING ACTIVITIES	9	11	1	5	8
C PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	12	11	19	9	14
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	6	6	1	11	3
E PERFORMING MAMMOGRAPHIC ACTIVITIES	*	0	0	0	0
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE ACTIVITIES	3	12	2	0	1
G PROCESSING RADIOGRAPHIC FILM	3	*	4	5	*
H PERFORMING GENERAL SERVICES	4	5	8	9	*
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	13	0	0	0	*
J PERFORMING OR PARTICIPATING IN BEDSIDE, SURGICAL RADIOGRAPHY, AND FLUOROSCOPY	2	0	0	0	0
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	2	0	0	0	0
L PERFORMING COMPUTED TOMOGRAPHY (CT) ACTIVITIES	1	*	0	0	0
M PERFORMING MAGNETIC RESONANCE IMAGING (MRI) ACTIVITIES	2	0	0	27	0
N PERFORMING ANGIOGRAPHIC AND INTERVENTIONAL ACTIVITIES	*	0	0	0	0
O PERFORMING ULTRASONOGRAPHY ACTIVITIES	3	0	34	0	0
P PERFORMING RADIATION THERAPY	*	*	0	0	0
Q PERFORMING NUCLEAR MEDICINE ACTIVITIES	0	20	0	0	0
R PERFORMING MEDICAL READINESS ACTIVITIES	3	1	1	2	5

* Denotes less than 1 percent

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY 4R031/B SKILL LEVEL MEMBERS

TASKS	PERCENT MEMBERS PERFORMING (N=208)
I329 Perform ankle radiographic examinations	93
I344 Perform hand radiographic examinations	92
I342 Perform foot radiographic examinations	92
I333 Perform cervical spine radiographic examinations	92
I341 Perform finger radiographic examinations	92
I351 Perform lumbar spine radiographic examinations	92
I345 Perform hip radiographic examinations	92
I343 Perform forearm radiographic examinations	92
I334 Perform chest radiographic examinations	91
I348 Perform knee radiographic examinations	91
I337 Perform elbow radiographic examinations	91
I370 Perform shoulder radiographic examinations	90
I375 Perform thoracic spine radiographic examinations	90
I339 Perform femur radiographic examinations	90
I376 Perform toe radiographic examinations	89
I350 Perform lower-leg radiographic examinations	89
I331 Perform calcaneus radiographic examinations, such as oscalcis	89
I327 Perform abdominal radiographic examinations	88
I346 Perform humerus radiographic examinations	87
I335 Perform clavicle radiographic examinations	87
I362 Perform radiation protection procedures when using fixed radiographic equipment	86
I364 Perform rib radiographic examinations	86
I338 Perform facial bone radiographic examinations	86
I363 Perform radiographic soft tissue studies	85
I336 Perform coccyx radiographic examinations	85
I361 Perform pelvic radiographic examinations	84
I371 Perform skull radiographic examinations	84
I328 Perform acromio-clavicular (A-C) joint radiographic examinations	84
I360 Perform patella radiographic examinations	83
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	82
I355 Perform nasal-bone radiographic examinations	82
I366 Perform sacrum radiographic examinations	81
I330 Perform bone-age studies	79
I367 Perform scapula radiographic examinations	78
J386 Complete radiographs on ward patients	77
I368 Perform scoliosis radiographic examinations	77
J379 Complete radiographs in emergency rooms	76
K402 Complete radiographs during barium enemas	76
J395 Set up portable radiographic equipment	75
K408 Complete radiographs during intravenous pyelographies (IVPs) such as excretory	75

* Average Number of Tasks Performed - 108

TABLE 9
REPRESENTATIVE TASKS PERFORMED BY 4R051/A/B/C PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=467)
C124 Administer pregnancy questionnaires	69
I334 Perform chest radiographic examinations	66
I329 Perform ankle radiographic examinations	66
I344 Perform hand radiographic examinations	65
I342 Perform foot radiographic examinations	65
I341 Perform finger radiographic examinations	65
I333 Perform cervical spine radiographic examinations	65
C167 Schedule patients for diagnostic imaging procedures	65
I370 Perform shoulder radiographic examinations	65
I345 Perform hip radiographic examinations	65
I337 Perform elbow radiographic examinations	65
I335 Perform clavicle radiographic examinations	65
I348 Perform knee radiographic examinations	64
I351 Perform lumbar spine radiographic examinations	64
I343 Perform forearm radiographic examinations	64
I376 Perform toe radiographic examinations	64
I350 Perform lower-leg radiographic examinations	64
I339 Perform femur radiographic examinations	64
I331 Perform calcaneus radiographic examinations, such as oscalcis	64
G281 Load or unload film cassettes or magazines	63
I327 Perform abdominal radiographic examinations	63
I361 Perform pelvic radiographic examinations	63
I375 Perform thoracic spine radiographic examinations	63
I346 Perform humerus radiographic examinations	63
I364 Perform rib radiographic examinations	63
I371 Perform skull radiographic examinations	63
I338 Perform facial bone radiographic examinations	63
I359 Perform paranasal sinus radiographic examinations	62
I328 Perform acromio-clavicular (A-C) joint radiographic examinations	62
I336 Perform coccyx radiographic examinations	62
I355 Perform nasal-bone radiographic examinations	62
I366 Perform sacrum radiographic examinations	62
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	61
G272 Clean automatic film processor racks	61
I367 Perform scapula radiographic examinations	61
I365 Perform sacroiliac (S-I) joint radiographic examinations	61
I330 Perform bone-age studies	61
C137 File radiographic films or reports	60
I360 Perform patella radiographic examinations	60
I363 Perform radiographic soft tissue studies	60
I362 Perform radiation protection procedures when using fixed radiographic equipment	59
C147 Label or update film file envelopes or folders	59
I352 Perform mandible radiographic examinations	58
I368 Perform scoliosis radiographic examinations	57
H313 Perform infection control procedures	56

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 4R031/B AND 4R051/A/B/C PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 4R031/B (N=208)	DAFSC 4R051/A/B/C (N=467)	DIFF
J390	67	36	30
J383	72	42	30
J381	72	42	29
J394	66	38	28
I351	92	64	28
I343	92	64	28
J397	74	47	27
I342	92	65	27
I329	93	66	27
J385	55	28	27
I362	86	59	27
I344	92	65	27
I345	92	65	27
J392	74	48	26
J395	75	49	26
J378	67	41	26
A10	5	37	-32
A86	7	39	-32
A16	7	38	-31
A54	4	32	-28
A42	4	31	-27
A89	4	29	-25
A9	4	28	-24
A41	4	28	-24
B102	6	28	-23
B99	9	32	-23
A2	10	32	-22
D188	10	31	-21

which best differentiate between 3- and 5-skill level members. Figures show 5-skill level members perform more supervisory tasks, while 3-skill level members perform or participate in more bedside or surgical radiography.

DAFSC 4R051A. There were 42 4R051A members in the sample. Nearly all perform the Nuclear Medicine Job. Only a few were working outside their shred by spending time performing standard radiographic procedures.

DAFSC 4R051B. Of the 23 4R051B members surveyed, only 7 had the Ultrasound Job. Twelve were spending time performing standard radiographic procedures and four were performing the nontechnical Supervisory Job.

DAFSC 4R051C. Only three 4R051C members were included in the study. Two performed the MRI Job and one performed the CT Job.

DAFSC 4R071. Seven-skill level “slick” respondents perform a mixture of technical and supervisory tasks. While over half perform the traditional Supervisory Job, a quarter were doing the standard radiologic procedure. Smaller numbers were involved in the specialized modalities, instructing, and performing supply functions. Representative tasks performed by 4R071/A/B/C members are shown in Table 11. Tasks which best differentiate between all 5- and 7-skill level members are listed in Table 12. Figures show 7-skill level members perform more supervisory tasks, while 5-skill level members perform more technical tasks.

DAFSC 4R090/4R000. There were only seven 4R090 and 4R000 members in the sample, all performing the Management/Supervision Job. As the senior members of the career ladder they spend the majority of their time performing management, supervisory, and general administrative activities. This is shown by representative tasks performed listed in Table 13. Table 14 shows the tasks which best differentiate between 7-skill level and 9-skill level/CEM members. A higher percentage of the senior members perform management tasks.

Summary

Progression in the 4R0X1/A/B/C career ladder follows a pattern of technical job focus at the 3- and 5-skill levels with increased involvement with supervision at the 7-skill level and management at the 9-skill/CEM level. The move from performing standard radiographic exams to specialized modalities is more evident at the 5-skill level. Progression into managerial and supervisory duties occurs at the 7- and 9-skill levels. Nine-skill level members and CEMs devote essentially all their time performing to management functions.

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY 4R071/A/B/C PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=135)
A16 Counsel subordinates concerning personal matters	93
A10 Conduct supervisory performance feedback sessions	85
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	82
A54 Evaluate personnel for compliance with performance standards	82
A89 Write performance reports or supervisory appraisals	81
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	80
A65 Inspect personnel for compliance with military standards	80
A42 Establish performance standards for subordinates	79
A2 Assign personnel to work areas or duty positions	74
A7 Conduct self-inspections or self-assessments	74
A41 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	72
A24 Develop or establish work methods or procedures	72
A17 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	69
A90 Write recommendations for awards or decorations	67
A25 Develop or establish work schedules	66
A66 Interpret policies, directives, or procedures for subordinates	66
A55 Evaluate personnel for promotion, demotion, reclassification, or special awards	66
A12 Coordinate orders or requests with facility management personnel	66
A6 Conduct safety inspections of equipment or facilities	66
A33 Direct administrative functions	64
D176 Identify and report equipment or supply problems	64
A34 Direct patient care activities	64
C124 Administer pregnancy questionnaires	64
A35 Direct training functions	61
B115 Maintain training records or files	60
A59 Evaluate work schedules	60
A62 Initiate actions required due to substandard performance of personnel	60
C127 Compile data for records, reports, logs, or trend analyses	59
A49 Evaluate job-related suggestions	59
A75 Plan or schedule work assignments or priorities	59
A13 Coordinate radiographic equipment replacements	59
C167 Schedule patients for diagnostic imaging procedures	59
D172 Coordinate maintenance of equipment with appropriate agencies	58
C149 Maintain administrative files	57
A36 Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	56
A60 Evaluate workload requirements	56
A88 Write job or position descriptions	56
A48 Evaluate job or position descriptions	56
B102 Counsel trainees on training progress	55
A83 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	55
A51 Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	54
A14 Coordinate radiology activities with other medical facility sections	54

* Average Number of Tasks Performed - 147

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 4R051/A/B/C AND 4R071/A/B/C PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 4R051/A/B/C (N=467)	DAFSC 4R071/A/B/C (N=135)	DIFF
H306	Maintain sterile fields	52	23	29
J386	Complete radiographs on ward patients	47	21	25
J379	Complete radiographs in emergency rooms	52	27	24
K403	Complete radiographs during barium swallow examinations	51	27	24
K402	Complete radiographs during barium enemas	51	27	24
K408	Complete radiographs during intravenous pyelographies (IVPs) such as excretory	50	26	24
J395	Set up portable radiographic equipment	49	26	24
G272	Clean automatic film processor racks	61	38	23
K418	Complete radiographs during small bowel series	48	26	22
J394	Set up portable C-arm units	38	16	22
K400	Complete radiographs during air-contrast enemas	50	29	21
K420	Complete radiographs during upper gastrointestinal (UGI) series	48	27	21
J391	Instruct operating room technicians on positioning of cassettes personnel	40	20	20
A16	Counsel subordinates concerning personal matters	38	93	-55
A89	Write performance reports or supervisory appraisals	29	81	-52
A33	Direct administrative functions	14	64	-50
A54	Evaluate personnel for compliance with performance standards	32	82	-50
A10	Conduct supervisory performance feedback sessions	37	85	-48
A42	Establish performance standards for subordinates	31	79	-48
A66	Interpret policies, directives, or procedures for subordinates	20	66	-46
A24	Develop or establish work methods or procedures	26	72	-46
A13	Coordinate radiographic equipment replacements	14	59	-44
A48	Evaluate job or position descriptions	11	56	-44

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY 4R090/4R000 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=7)
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	100
A86 Supervise military personnel	100
A61 Indorse performance reports or supervisory appraisals	100
A89 Write performance reports or supervisory appraisals	100
A41 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	100
A54 Evaluate personnel for compliance with performance standards	100
A42 Establish performance standards for subordinates	100
A55 Evaluate personnel for promotion, demotion, reclassification, or special awards	100
A45 Evaluate budget requirements	100
A37 Draft budget requirements	100
A90 Write recommendations for awards or decorations	100
A7 Conduct self-inspections or self-assessments	100
A60 Evaluate workload requirements	100
A65 Inspect personnel for compliance with military standards	100
A64 Initiate personnel action requests	100
A16 Counsel subordinates concerning personal matters	86
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	86
A10 Conduct supervisory performance feedback sessions	86
A48 Evaluate job or position descriptions	86
A70 Plan briefings, conferences, or workshops	86
A66 Interpret policies, directives, or procedures for subordinates	86
A59 Evaluate work schedules	86
A32 Develop self-inspection or self-assessment program checklists	86
C129 Coordinate obtaining TDY orders with appropriate agencies	86
A46 Evaluate inspection report findings or inspection procedures	86
A25 Develop or establish work schedules	86
A83 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	86
A2 Assign personnel to work areas or duty positions	86
A36 Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	71
A33 Direct administrative functions	71
A9 Conduct supervisory orientations for newly assigned personnel	71
C142 Initiate requests for TDY orders	71
A53 Evaluate mobility, contingency, disaster preparedness, or unit emergency or alert plans	71
A17 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	71
A13 Coordinate radiographic equipment replacements	71
A91 Write replies to inspection reports	71
A49 Evaluate job-related suggestions	71
A14 Coordinate radiology activities with other medical facility sections	57

* Average Number of Tasks Performed - 97

TABLE 14

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 4R071/A/B/C AND 4R090/4R000 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 4R071/A/B/C (N=135)	DAFSC 4R090/4R000 (N=7)	DIFF
I351 Perform lumbar spine radiographic examinations	50	*	50
I370 Perform shoulder radiographic examinations	50	*	50
I348 Perform knee radiographic examinations	50	*	50
I334 Perform chest radiographic examinations	50	*	50
I344 Perform hand radiographic examinations	50	*	50
C124 Administer pregnancy questionnaires	64	14	49
I337 Perform elbow radiographic examinations	49	*	49
I362 Perform radiation protection procedures when using fixed radiographic equipment	48	*	48
I371 Perform skull radiographic examinations	48	*	48
A64 Initiate personnel action requests	34	100	-65
C129 Coordinate obtaining TDY orders with appropriate agencies	34	86	-52
A26 Develop organizational or functional charts	37	86	-49
A37 Draft budget requirements	52	100	-48
A61 Indorse performance reports or supervisory appraisals	53	100	-47
A45 Evaluate budget requirements	53	100	-47
A60 Evaluate workload requirements	56	100	-44
A53 Evaluate mobility, contingency, disaster preparedness, or unit emergency or alert plans	28	71	-43
A32 Develop self-inspection or self-assessment program checklists	44	86	-41
R699 Brief personnel concerning disaster preparedness and wartime missions	34	71	-37
R713 Initiate treatment for thermal injuries or heat disorders	9	43	-34
A63 Initiate host-tenant or interservice agreements	10	43	-32
A83 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	55	86	-31

TRAINING ANALYSIS

Occupational survey data are one of many sources of information which can be used to assist in the development of training programs for career ladder personnel. Factors used to evaluate entry-level training include duties performed by members across career ladder jobs, distribution of personnel across career ladder jobs, percentages of members performing specific tasks, ratings of how much training emphasis tasks should receive in formal training, and relative TD ratings.

First-Enlistment Personnel

There were 299 respondents in their first enlistment (1-48 months TAFMS), representing 37 percent of the total survey sample. Most first-enlistment personnel work in the Standard Radiology cluster of jobs (see Figure 2). Their focus on performing standard radiographic exams is shown in Table 15, which lists time spent on duties, and Table 16, which lists tasks most first-enlistment members perform. Their focus on performing standard examinations is further demonstrated by the list of equipment used by 20 percent of first-job or first-enlistment personnel is presented in Table 17.

FIRST-ENLISTMENT PERSONNEL JOBS (N=96)

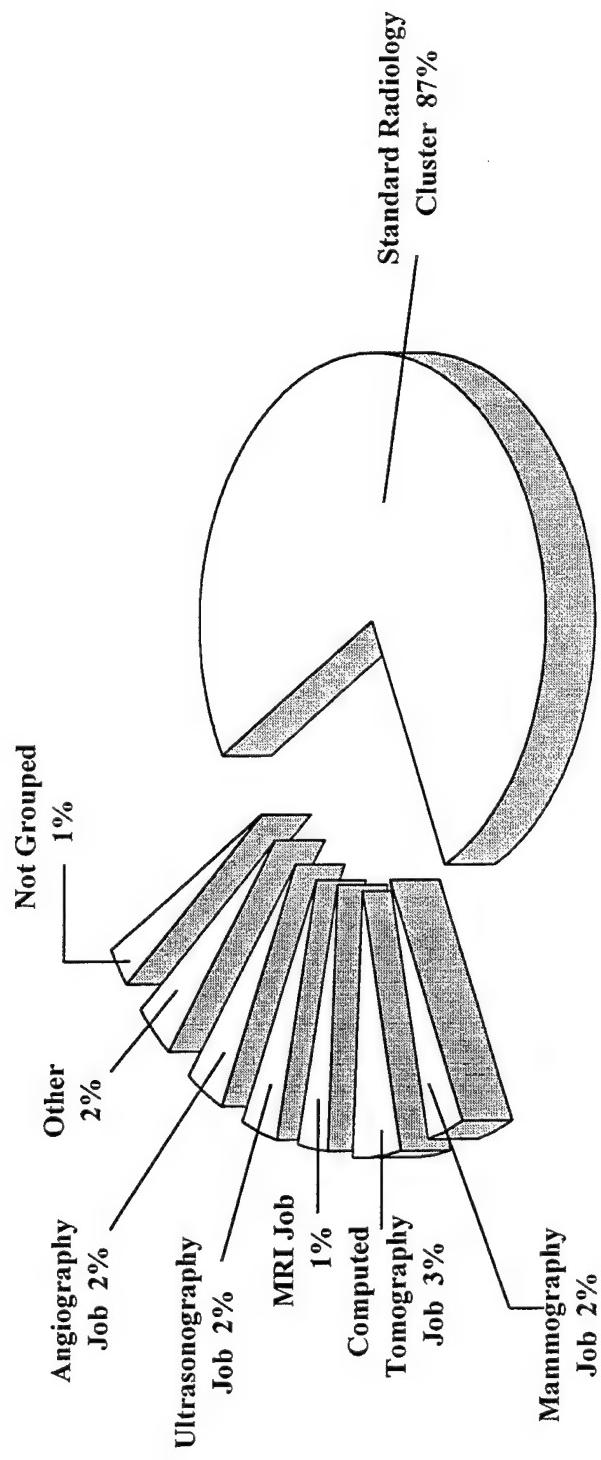


FIGURE 2

TABLE 15
RELATIVE PERCENT TIME SPENT ON DUTIES BY FIRST-ENLISTMENT PERSONNEL

DUTY	PERCENT TIME SPENT (N=299)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3
B PERFORMING TRAINING ACTIVITIES	1
C PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	8
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1
E PERFORMING MAMMOGRAPHIC ACTIVITIES	1
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE ACTIVITIES	4
G PROCESSING RADIOGRAPHIC FILM	6
H PERFORMING GENERAL SERVICES	8
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	38
J PERFORMING OR PARTICIPATING IN BEDSIDE, SURGICAL RADIOGRAPHY, AND FLUOROSCOPY	11
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	9
L PERFORMING COMPUTED TOMOGRAPHY (CT) ACTIVITIES	3
M PERFORMING MAGNETIC RESONANCE IMAGING (MRI) ACTIVITIES	1
N PERFORMING ANGIOGRAPHIC AND INTERVENTIONAL ACTIVITIES	2
O PERFORMING ULTRASONOGRAPHY ACTIVITIES	2
P PERFORMING RADIATION THERAPY	*
Q PERFORMING NUCLEAR MEDICINE ACTIVITIES	*
R PERFORMING MEDICAL READINESS ACTIVITIES	2

* Denotes less than 0.5 percent

TABLE 16
REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=299)
I329 Perform ankle radiographic examinations	89
I334 Perform chest radiographic examinations	88
I342 Perform foot radiographic examinations	88
I333 Perform cervical spine radiographic examinations	88
I351 Perform lumbar spine radiographic examinations	88
I344 Perform hand radiographic examinations	87
I348 Perform knee radiographic examinations	87
I341 Perform finger radiographic examinations	87
I370 Perform shoulder radiographic examinations	87
I345 Perform hip radiographic examinations	87
I343 Perform forearm radiographic examinations	87
I337 Perform elbow radiographic examinations	87
I376 Perform toe radiographic examinations	86
I375 Perform thoracic spine radiographic examinations	86
I339 Perform femur radiographic examinations	86
I327 Perform abdominal radiographic examinations	85
I350 Perform lower-leg radiographic examinations	85
I331 Perform calcaneus radiographic examinations, such as oscalcis	85
I346 Perform humerus radiographic examinations	84
I335 Perform clavicle radiographic examinations	84
I364 Perform rib radiographic examinations	83
I338 Perform facial bone radiographic examinations	83
I361 Perform pelvic radiographic examinations	82
I371 Perform skull radiographic examinations	82
I328 Perform acromio-clavicular (A-C) joint radiographic examinations	82
I363 Perform radiographic soft tissue studies	81
I336 Perform coccyx radiographic examinations	81
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	80
I362 Perform radiation protection procedures when using fixed radiographic equipment	80
I355 Perform nasal-bone radiographic examinations	80
I360 Perform patella radiographic examinations	79
I330 Perform bone-age studies	79
I366 Perform sacrum radiographic examinations	78
I367 Perform scapula radiographic examinations	77
I365 Perform sacroiliac (S-I) joint radiographic examinations	76
I359 Perform paranasal sinus radiographic examinations	75
I368 Perform scoliosis radiographic examinations	75
K402 Complete radiographs during barium enemas	74
J379 Complete radiographs in emergency rooms	74
J395 Set up portable radiographic equipment	72

Average Number of Tasks Performed - 237

TABLE 17
 EQUIPMENT USED BY 20 PERCENT OR MORE
 FIRST-JOB OR FIRST-ENLISTMENT AFSC 4R0X1 PERSONNEL

EQUIPMENT	1ST JOB (N=86)	1ST ENL (N=299)
Film Processing Units, Automatic	87	77
Grid Cassettes	83	74
Upright Buckys	79	74
Portable Radiographic Units	78	68
Fluoroscopic Units, Fixed	69	63
Radiographic Film Copiers	65	63
Pediatric Immobilizers	62	58
Stationary Grids	56	55
Densitometers	50	50
Fluoroscopic Units, Portable	49	48
Sensitometers	43	46
Cameras, Radiographic Identification	40	44
Cameras, Spot Film	40	44
Dosimetry Equipment, Thermoluminescent	37	42
Scanogram Rulers	33	43
Consolidated Hospital Computer Systems (CHCS) Equipment	33	40
Hospital Patient Beds	29	37
Personal Computers	26	36
Automatic Chest Units	23	30
Radiation Monitoring Devices	22	21
X-Ray Film Laser Printers	21	28
Quality Assurance (QA) Test Kits	21	21
Microwaves	19	28
Rectilinear Tomographic Units	9	20

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary task factors used to help training development personnel decide what tasks need to be emphasized for entry-level training. These ratings, based on judgments of senior career ladder NCOs at operational units, provide a rank-ordering of those tasks considered important for first-enlistment airmen training (TE) and a measure of the difficulty of those tasks (TD). When combined with the data on percentages of entry-level personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training of new personnel, but this decision must be weighed against percentages of personnel performing the tasks, concerns of commands, and the criticality of the tasks.

To assist training development personnel, an Automated Training Indicator (ATI) is assigned to each task in the JI. ATIs combine percentages of first-enlistment personnel with TE and TD data to reflect a training decision based on the Training Decision Logic Table found in Attachment 2, AETCI 36-2101. ATIs allow training development personnel to quickly focus their attention on tasks most likely to qualify for the initial resident course.

Tasks with the highest TE ratings are listed in Table 18. Included for each task are the percentage of first-job and first-enlistment personnel performing the task and the TD rating. As shown, most tasks deal with performing standard radiologic exams, bedside and surgical radiography, and special radiographic procedures. Greater than 50 percent of first-job and first-enlistment personnel are performing the listed tasks.

Table 19 lists the tasks with the highest TD ratings. The percentages of first-job, first-enlistment, appropriate skill level personnel performing the tasks, and the TE ratings are included for each task. The majority of tasks rated high in difficulty involve the specialized modalities and are performed by members holding 5- or 7-skill levels.

TABLE 18

4R0X1 TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS	4R0X1 PERCENT MEMBERS PERFORMING			TASK DIFF*
	TNG EMP*	1ST JOB (N=86)	1ST ENL (N = 296)	
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	7.48	90	80	4.43
I333 Perform cervical spine radiographic examinations	7.39	98	88	4.81
J382 Complete radiographs in operating rooms	7.30	72	71	5.73
K426 Identify patient reactions to contrast media	7.28	45	49	5.10
I362 Perform radiation protection procedures when using fixed radiographic equipment	7.22	92	80	3.54
I334 Perform chest radiographic examinations	7.22	98	88	3.22
I351 Perform lumbar spine radiographic examinations	7.20	98	88	4.65
J379 Complete radiographs in emergency rooms	7.09	78	74	4.98
K408 Complete radiographs during intravenous pyelographies (IVPs) such as excretory	7.09	74	72	4.89
I327 Perform abdominal radiographic examinations	7.07	94	85	3.66
K402 Complete radiographs during upper gastrointestinal (UGI) series	7.04	69	67	4.47
J381 Complete radiographs in nurseries	7.02	63	65	5.19
J380 Complete radiographs in intensive care units (ICUs)	7.00	60	57	5.06
J385 Complete radiographs on patients in traction	6.96	45	48	6.09
I338 Perform facial bone radiographic examinations	6.96	85	83	5.16
I329 Perform ankle radiographic examinations	6.91	99	89	3.36
J384 Complete radiographs on patients in isolation	6.85	44	46	5.52
K398 Assist in emergency treatment of patients exhibiting reactions to contrast media	6.85	28	33	5.79
I337 Perform elbow radiographic examinations	6.83	97	87	3.30
I375 Perform thoracic spine radiographic examinations	6.83	97	86	4.59
I348 Perform knee radiographic examinations	6.83	98	87	4.04
J383 Complete radiographs in recovery rooms	6.83	65	65	4.94
J392 Perform radiation protection procedures when using portable radiographic and fluoroscopic equipment	6.83	72	70	3.92

* Mean TE Rating is 2.21, and Standard Deviation is 2.09 (High TE = 4.30)

** Average TD Rating is 5.00

TABLE 19

4R0X1/A/B/C TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS	4R0X1/A/B/C						PERCENT MEMBERS PERFORMING			
	TASK DIFF	1ST JOB (N=86)		5-SKL ENL (N=299)		7-SKL LEVEL (N=467)		TNG LEVEL (N=135)	TNG EMP	
		1ST	JOB	ENL	LEVEL	(N=467)	(N=135)			
M510	Perform nonstandard MR scans	7.54	0	1	1	3	3			0.57
O546	Assist in performing ultrasound-guided	7.48	0	1	1	1	1			0.52
P611	Develop treatment plans using treatment planning equipment	7.28	0	0	0	0	0			0.35
P610	Develop computer generated preliminary and post plans for brachytherapies	7.27	0	0	0	0	0			0.35
E199	Perform stereotactic breast biopsies, other than ultrasound-guided	6.97	1	5	5	5	3			2.19
O582	Perform spectral Doppler ultrasonographies	6.94	0	2	7	7	4			0.63
O559	Perform carotid ultrasonographies	6.90	0	2	5	5	7			0.94
O573	Perform organ transplant ultrasonographies	6.82	0	1	5	5	2			0.69
L461	Perform CT three-dimensional reconstruction images	6.82	0	3	8	4	4			1.41
P616	Fabricate tissue compensators	6.78	0	0	0	0	1			0.46
P607	Conduct radiation therapy simulations	6.77	0	0	0	0	1			0.63
M493	Perform MR gated cardiac scans	6.71	0	1	4	4	6			0.72
E194	Complete radiographs during mammographic localizations	6.70	1	6	12	4	4			2.63
O562	Perform echocardiographies for pericardial effusions	6.66	0	0	1	1	1			0.56
O553	Perform adult cranial shunt ultrasonographies	6.65	0	0	1	1	2			0.52
M501	Perform MR pediatric brain scans	6.64	0	1	4	7	7			0.74
M491	Perform MR cine scans	6.60	0	1	3	3	3			0.59
H297	Calculate nuclear medicine radiopharmaceutical doses	6.43	1	1	10	8	8			0.39
I353	Perform mastoid or petrous pyramid radiographic examinations	6.17	48	47	39	28	28			5.52
J385	Complete radiographs on patients in traction	6.09	45	48	28	13	13			6.96
I347	Perform internal auditory meatus radiographic examinations, such as canals	5.98	27	28	22	21	21			4.57

* Average TD Rating is 5.00

Specialty Training Standard (STS)

The AFSC 4R0X1/A/B/C STS, dated April 1996, was reviewed using occupational survey data. The first step for SMEs to match JI tasks to appropriate sections and subsections of the STS. Then, using the guidance provided in AETCI 36-2601, STS elements were reviewed to determine if matched tasks were performed by at least 20 percent or more of first-job (1-24 months TAFMS), first-enlistment (1-48 months TAFMS), 5-, or 7-skill level group members. Any STS entry with tasks performed by less than 20 percent members of any of the groups is considered to be unsupported by survey data and might not be appropriate for the STS.

The initial analysis of the STS using percent of TAFMS and DAFSC groups performing tasks as the criteria revealed many items were unsupported. Most of these involved the special modalities that relatively few of the total sample are involved with. There were several items in paragraph 12.a, dealing with various checks and quality control activities, that were unsupported. A sample of these unsupported STS entries with criteria group data is presented in Table 22.

Because of the number of unsupported STS entries using standard criterion group data, an additional analysis was performed using percent members of the clusters and jobs as criterion groups. The results were that most tasks matched to the STS paragraphs at far more than 20 percent of 1 job group performing the matched tasks. It is interesting to note line items in paragraph 12.a were still unsupported using members of the jobs. Training personnel and SMEs should review these unsupported STS items to determine if inclusion in future revisions is warranted.

Tasks performed by 20 percent or more of criterion groups, but not matched to any STS paragraphs are listed in Table 21. Training personnel and SMEs should consider these unreferenced tasks to determine if inclusion in the STS is justified.

Plan of Instruction (POI)

The tentative POI J3AQR4R031, dated September 1996, was also reviewed using survey data. Learning objectives with matched tasks performed by 30 percent or more personnel in their first job (1-24 months TAFMS) or their first enlistment (1-48 months TAFMS) are considered to be supported. Objectives matched to tasks performed by less than 30 percent criterion group members should be considered for deletion.

Analysis of the POI showed unsupported learning objectives dealing with characteristics of radiographic film, principles of tomography, and using radiographic technique charts. Examples of the unsupported objectives, along with accompanying JI tasks and survey data are listed in Table 22. Training personnel and SMEs should review these unsupported POI objectives to determine if inclusion in future revisions is warranted. Tasks performed by 30 percent or more of criterion groups not matched to objectives are listed in Table 23. Training personnel and SMEs should consider these unreferenced tasks to determine if inclusion in the STS is justified.

TABLE 20

EXAMPLES OF STS ELEMENTS NOT SUPPORTED BY SURVEY DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM	TNG EMP	PERCENT MEMBERS PERFORMING					TSK DIFF
		1ST JOB	1ST ENL	3 LVL	5 LVL	7 LVL	
10.d. Maintain nominal index files (manual or computerized)							
C169 Update patients nominal index card files	3.37	17	13	13	14	12	2.70
12.a.1.a. kVp Checks							
F226 Evaluate radiographic units using stepwedge tests	3.35	14	8	10	11	10	4.74
F258 Perform radiographic unit kilovoltage linearity tests	0.98	1	1	0	2	1	5.20
12.a.1.b. mA/time checks							
F207 Conduct exposure timer tests	2.94	8	5	8	5	5	4.58
12.a.1.c. Beam alignment/field alignment checks							
F237 Perform collimator alignment tests	2.35	10	7	10	9	11	4.65
F238 Perform collimator light accuracy tests	2.04	6	4	6	6	9	4.63
12.a.2.b. Replenishment rate checks							
F216 Conduct replenisher rate checks	4.07	12	12	12	19	21	3.90
G291 Troubleshoot automatic film processing machines	4.31	13	18	19	29	40	5.46
12.a.2.c. Temperature checks							
G291 Troubleshoot automatic film processing machines	4.31	13	18	19	29	40	5.46

Mean TE rating is 2.21, and the Standard Deviation is 2.09 (High TE = 4.30)

TABLE 21

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
4R0X1/A/B/C GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS	TNG EMP	<u>JOB</u>	PERCENT MEMBERS PERFORMING					TSK <u>DIF</u>
			1ST	1ST <u>ENL</u>	3 <u>LVL</u>	5 <u>LVL</u>	7 <u>LVL</u>	
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	1.48	28	34	30	50	50	80	4.32
C162 Read radiology reports to physicians or medical personnel	2.89	16	22	19	33	33	38	2.64
C164 Review radiographic consultation requests	4.59	28	34	33	46	53	53	3.94
F224 Evaluate film strips using densitometers	5.37	20	25	23	32	32	22	4.27
G266 Adjust automatic film processing chemical mixers	2.98	21	19	23	18	18	21	4.73
I377 Perform wrist radiographic examinations	6.41	28	23	25	18	18	13	3.04
K406 Complete radiographs during foreign body localization studies	5.70	44	42	45	30	30	16	4.67
R704 Don or doff chemical warfare personal protective clothing	4.89	13	22	20	35	35	40	4.53
R726 Perform patient carries using litter-method	4.74	15	22	21	33	33	27	4.21
R732 Transport litter patients	4.63	16	22	23	28	28	30	3.80

TABLE 22

EXAMPLES OF POI ELEMENTS NOT SUPPORTED BY SURVEY DATA
(LESS THAN 30 PERCENT MEMBERS PERFORMING)

			PERCENT MEMBERS PERFORMING				TSK DIF
			TNG EMP	ATI JOB	1ST ENL	1ST	
III.6a.	Without reference, identify characteristics of radiographic film with no more than three errors on Progress Check J3AQR4R031 000-III-6a. STS: 11g; Meas: PC, W						
G277	Identify radiographic film types	3.31	3	20	23	3.86	
G280	Label cassettes for screen speeds	2.87	3	7	4	2.68	
IX.11a.	Without reference, identify functional relationships of the cardiovascular and lymphatic systems with no more than three errors on Progress Check J3AQR4R031 000-IX-11a. STS: 13b(4); Meas: PC, W						
K422	Complete radiographs during venographies	5.87	11	19	20	5.55	
X.4a.	Without reference, identify the procedural considerations and anatomy visualized for selected contrast studies of the biliary system with no more than three errors on Progress Check J3AQR4R031 000-X-4a. STS: 15c(2); Meas: PC, W						
K413	Complete radiographs during oral cholecystographies	5.30	11	22	27	4.70	
K419	Complete radiographs during T-tube cholangiographies	5.56	11	22	27	5.04	
K431	Perform transhepatic cholangiographies	2.94	7	7	5	5.84	
X.8a.	Without reference, identify the principles of tomography with no more than three errors on Progress Check J3AQR4R031 000-X-8a. STS: 15c(7); Meas: PC, W						
K424	Complete radiographs using rectilinear tomographic equipment	5.59	11	15	24	5.16	
XII.1a.	Without reference, identify the utilization of radiographic technique charts with no more than three errors on Progress Check J3AQR4R031 000-XII-1a. STS: 4a; 11e Meas: PC, W						
C159	Maintain technique charts for radiographic units	3.81	3	8	12	3.88	
XIII.3a.	Without reference, identify principles and basic techniques of report of survey procedures for radiologic services with no more than three errors on Progress Check J3AQR4R031 000-XIII-3a. STS: 7e; 7f Meas: PC, W						
C128	Complete accident or incident reports	2.59	7	7	11	4.49	

TABLE 23

TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE
4R0X1/A/B/C GROUP MEMBERS AND NOT REFERENCED TO THE POI

TASKS	PERCENT MEMBERS PERFORMING			
	TNG EMP	ATI	1ST JOB	1ST ENL
C124 Administer pregnancy questionnaires	4.63	13	56	60
C160 Match radiographic consultation requests for doctor reviews	3.98	5	33	39
C161 Pick up or deliver radiographic films	3.89	5	34	35
C164 Review radiographic consultation requests	4.59	10	28	34
C167 Schedule patients for diagnostic imaging procedures	5.09	13	44	51
D176 Identify and report equipment or supply problems	3.94	15	15	30
F219 Correct radiographic film artifacts	5.30	12	20	30
F228 Identify film quality problems, such as improper positioning or radiographic techniques	6.09	12	28	38
F229 Identify radiographic film artifacts	5.83	12	29	44
H294 Assign patients to radiographic exposure rooms	2.26	5	43	45
H296 Assist patients in dressing	3.22	8	64	63
H307 Monitor condition of patient during standard diagnostic examinations	5.85	13	66	64
H317 Prepare and position patients for advanced radiographic procedures	3.67	15	41	41
H319 Prepare instruments and supplies needed for imaging	4.31	12	43	48
H323 Transport patients, other than litter patients	3.26	5	33	35
I330 Perform bone-age studies	6.39	13	78	79
I349 Perform long-bone studies	6.52	18	59	64
I354 Perform metastatic series examinations	5.33	12	35	33
I363 Perform radiographic soft tissue studies	6.41	13	86	81
I368 Perform scoliosis radiographic examinations	6.67	18	81	75

JOB SATISFACTION ANALYSIS

An examination of the responses to job satisfaction questions can give career ladder managers a better understanding of some of the factors affecting the job performance of airmen in the career ladder. Job satisfaction data can be expanded to provide indications of general attitudes within specific DAFSC groups.

Figures in Table 24 compare AFSC 4R0X1/A/B/C TAFMS group data to those of members of all medical career ladders surveyed in 1996. While Diagnostic Imaging personnel are more satisfied with their jobs than members of the comparative sample, they have noticeably lower reenlistment intentions.

An indication of the stability of job satisfaction perceptions within the 4R0X1/A/B/C career ladder over time is provided in Table 25. Figures compare current survey responses to those of the previous survey. Note only figures from the previous AFSC 903X0 are compared. Members of all TAFMS levels are currently more satisfied with the use of their talents and training than before. Reenlistment intentions increased from the previous survey for members with greater than 49 months TAFMS, while the number of members in their first enlistment who plan to reenlist dropped nearly 10 percent.

Finally, job satisfaction data for members of the jobs are provided in Table 26. Generally, job satisfaction data are high for personnel across all identified jobs. Sense of accomplishment gained from work, however, was low for the Nuclear Medicine, Angiography, Instructor, and Logistics and Supply jobs. The Standard Radiology, Mammography, and Computed Tomography jobs had the lowest intentions to reenlist.

Summary

Overall, AFSC 4R0X1/A/B/C members appear to be more satisfied with their jobs than members of a comparative sample of medical career ladder personnel. Furthermore, members of the current sample appear more satisfied with their jobs than personnel surveyed in 1992 (excluded Nuclear Medicine personnel). Job satisfaction data of specific career ladder jobs show members find their work interesting and feel their talents and training are being properly used. Respondents in four jobs--Nuclear Medicine, Angiography, Instructor, and Logistics and Supply--expressed the least sense of accomplishment from their work.

TABLE 24

**COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)**

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1996 4R0X1 (N=299)	COMP SAMPLE** (N=1,251)	1996 4R0X1 (N=163)	COMP SAMPLE** (N=813)	1996 4R0X1 (N=355)	COMP SAMPLE** (N=1,839)
EXPRESSED JOB INTEREST:						
INTERESTING	87	72	89	75	85	82
SO-SO	9	15	7	15	10	12
DULL	4	13	4	10	5	6
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	90	77	94	80	89	84
LITTLE OR NOT AT ALL	10	23	6	20	11	16
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	97	85	96	80	88	79
LITTLE OR NOT AT ALL	3	15	4	20	12	21
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	81	70	84	70	81	74
NEUTRAL	11	13	11	13	5	9
DISSATISFIED	8	17	5	17	14	17
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	43	57	54	67	73	74
NO, OR PROBABLY NO	57	43	46	33	11	10
PLAN TO RETIRE	0	*	0	*	16	16

* Denotes less than 1 percent

** Comparative sample of medical career ladders surveyed in 1996 (includes AFSC 4A0X1 Health Services Management, 4B0X1 Bioenvironmental Engineering, 4H0X1 Cardiopulmonary Laboratory, 4J0X1 Occupational Therapy, and 4N0X1A/B Medical Services)

TABLE 25

COMPARISON OF JOB SATISFACTION FOR AFSC 4R0X1/A/B/C
 TAFMS GROUPS IN CURRENT SURVEY AND 903X0 (4R0X1) PREVIOUS SURVEY
 (PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1996 4R0X1 (N=299)	1992 903X0 (N=191)	1996 4R0X1 (N=163)	1992 903X0 (N=238)	1996 4R0X1 (N=355)	1992 903X0 (N=224)
EXPRESSED JOB INTEREST:						
INTERESTING	87	89	89	88	85	79
SO-SO	9	9	7	7	10	11
DULL	4	2	4	5	5	10
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	90	86	94	90	89	81
LITTLE OR NOT AT ALL	10	14	6	10	11	19
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	97	91	96	93	88	84
LITTLE OR NOT AT ALL	3	9	4	7	12	16
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	81	*	84	*	81	*
NEUTRAL	11	*	11	*	5	*
DISSATISFIED	8	*	5	*	14	*
REENLISTMENT INTENTIONS:						
YES, OR PROBABLY YES	43	52	54	47	73	66
NO, OR PROBABLY NO	57	48	46	53	11	14
PLAN TO RETIRE	0	0	0	0	16	20

* Denotes less than 1 percent

TABLE 26

**COMPARISONS OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)**

	STANDARD RADIOLOGY (ST037) (N=501)	MGT/ SUPERVISION (ST29) (N=96)	MAMMO (ST048) (N=18)	CT (ST060) (N=32)	MRI (ST080) (N=22)
EXPRESSED JOB INTEREST:					
INTERESTING	84	90	100	100	86
SO-SO	11	7	0	0	9
DULL	5	3	0	0	5
PERCEIVED UTILIZATION OF TALENTS:					
FAIRLY WELL TO PERFECTLY					
LITTLE OR NOT AT ALL	12	10	6	0	0
OTHER	0	2	0	0	0
PERCEIVED UTILIZATION OF TRAINING:					
FAIRLY WELL TO PERFECTLY					
LITTLE OR NOT AT ALL	94	79	100	100	100
OTHER	6	21	0	0	0
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:					
SATISFIED	79	80	89	97	86
NEUTRAL	12	3	5	3	9
DISSATISFIED	9	17	6	0	5
REENLISTMENT INTENTIONS:					
YES, OR PROBABLY YES	56	67	50	53	73
NO, OR PROBABLY NO	42	4	44	41	23
WILL RETIRE	2	29	6	6	5

TABLE 26 (CONTINUED)

**COMPARISONS OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)**

	NUCLEAR MEDICINE (ST072) (N=49)	ANGIO (ST047) (N=16)	ULTRASOUND (ST044) (N=37)	INSTRUCTOR (ST026) (N=14)	LOGISTICS & SUPPLY (ST155) (N=5)
EXPRESSED JOB INTEREST:					
INTERESTING	90	100	97	86	60
SO-SO	4	0	3	0	20
DULL	6	0	0	14	20
PERCEIVED UTILIZATION OF TALENTS:					
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	92 8	100 0	97 3	93 7	80 20
PERCEIVED UTILIZATION OF TRAINING:					
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	94 6	100 0	100 0	93 7	100 0
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:					
SATISFIED	41	44	65	21	20
NEUTRAL	53	56	35	72	80
DISSATISFIED	6	0	0	7	0
REENLISTMENT INTENTIONS:					
YES, OR PROBABLY YES	78	100	95	86	100
NO, OR PROBABLY NO	8	0	0	0	0
WILL RETIRE	14	0	5	14	0

IMPLICATIONS

This survey was conducted primarily to provide training personnel with current information on the Diagnostic Imaging specialty for use in reviewing current training programs and training documents. With the exception of the Nuclear Medicine Job, results indicate the current jobs were performed in the previous survey. The present classification structure has 3 shreds--A for Nuclear Medicine, B for Ultrasound, and C for MRI. Currently, members are being reclassified, so their DAFSC suffix may not match the work they perform.

Analysis of career ladder documents indicates the 4R0X1/A/B/C STS was supported by survey data. The tentative POI, J3AQR4R031, was also supported by survey data. Training personnel and SMEs should consider the unreferenced tasks to determine if inclusion in the STS or POI is justified. Unsupported items or those with no matched tasks should be reviewed to determine if inclusion in future STS or POI revisions is warranted or if more tasks are needed in the JI.

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APPENDIX A

**REPRESENTATIVE TASKS PERFORMED BY
MEMBERS OF CAREER LADDER JOBS**

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TABLE A1
STANDARD RADIOLOGY CLUSTER
ST037

TASKS	PERCENT MEMBERS PERFORMING (N=501)
I329 Perform ankle radiographic examinations	100
I344 Perform hand radiographic examinations	99
I342 Perform foot radiographic examinations	99
I341 Perform finger radiographic examinations	99
I333 Perform cervical spine radiographic examinations	99
I343 Perform forearm radiographic examinations	99
I345 Perform hip radiographic examinations	99
I337 Perform elbow radiographic examinations	99
I334 Perform chest radiographic examinations	98
I348 Perform knee radiographic examinations	98
I351 Perform lumbar spine radiographic examinations	98
I370 Perform shoulder radiographic examinations	98
I375 Perform thoracic spine radiographic examinations	98
I376 Perform toe radiographic examinations	97
I350 Perform lower-leg radiographic examinations	97
I339 Perform femur radiographic examinations	97
I331 Perform calcaneus radiographic examinations, such as oscalcis	97
I335 Perform clavicle radiographic examinations	97
I346 Perform humerus radiographic examinations	96
I327 Perform abdominal radiographic examinations	95
I364 Perform rib radiographic examinations	95
I338 Perform facial bone radiographic examinations	95
I361 Perform pelvic radiographic examinations	94
I336 Perform coccyx radiographic examinations	94
I371 Perform skull radiographic examinations	93
I328 Perform acromio-clavicular (A-C) joint radiographic examinations	93
I362 Perform radiation protection procedures when using fixed radiographic equipment	92
I355 Perform nasal-bone radiographic examinations	92
I366 Perform sacrum radiographic examinations	92
I363 Perform radiographic soft tissue studies	91
I360 Perform patella radiographic examinations	90
I367 Perform scapula radiographic examinations	90
I365 Perform sacroiliac (S-I) joint radiographic examinations	90
I330 Perform bone-age studies	90
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	88
I359 Perform paranasal sinus radiographic examinations	88
I368 Perform scoliosis radiographic examinations	86
I356 Perform nonstandard or additional orthopedic projections	79
K402 Complete radiographs during barium enemas	78
J379 Complete radiographs in emergency rooms	78
K400 Complete radiographs during air-contrast enemas	77
K408 Complete radiographs during intravenous pyelographies (IVPs) such as excretory	76
K403 Complete radiographs during barium swallow examinations	75
J395 Set up portable radiographic equipment	75

TABLE A2
MANAGEMENT/SUPERVISION CLUSTER
ST029

TASKS	PERCENT MEMBERS PERFORMING (N=96)
A86 Supervise military personnel	97
A54 Evaluate personnel for compliance with performance standards	97
A42 Establish performance standards for subordinates	97
A16 Counsel subordinates concerning personal matters	97
A89 Write performance reports or supervisory appraisals	94
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	94
A2 Assign personnel to work areas or duty positions	93
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	92
A10 Conduct supervisory performance feedback sessions	92
A65 Inspect personnel for compliance with military standards	92
A7 Conduct self-inspections or self-assessments	92
A41 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	91
A9 Conduct supervisory orientations for newly assigned personnel	91
A24 Develop or establish work methods or procedures	90
A25 Develop or establish work schedules	89
A55 Evaluate personnel for promotion, demotion, reclassification, or special awards	88
A90 Write recommendations for awards or decorations	88
A66 Interpret policies, directives, or procedures for subordinates	86
A59 Evaluate work schedules	85
A48 Evaluate job or position descriptions	83
A14 Coordinate radiology activities with other medical facility sections	83
A33 Direct administrative functions	82
A34 Direct patient care activities	82
A17 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	81
A60 Evaluate workload requirements	81
A35 Direct training functions	80
A49 Evaluate job-related suggestions	80
A36 Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	79
A88 Write job or position descriptions	79
A12 Coordinate orders or requests with facility management personnel	79
A75 Plan or schedule work assignments or priorities	78
A13 Coordinate radiographic equipment replacements	78
A62 Initiate actions required due to substandard performance of	78
C127 Compile data for records, reports, logs, or trend analyses	74
A85 Supervise civilian employees	72
C133 Develop computerized charts or graphs for metric reporting, such as appointment backlog or repeat rates and analyses	72
A61 Indorse performance reports or supervisory appraisals	70

TABLE A3
MAMMOGRAPHY JOB
ST048

TASKS	PERCENT MEMBERS PERFORMING (N=18)
E197 Perform mammograms	100
E192 Complete magnification radiographs for mammographies	100
E198 Perform mammographic microcalcification studies	100
E195 Complete radiographs of mammographic biopsy specimens	100
E196 Perform coned-down mammographic views	94
F230 Inspect film cassettes or screens	94
E194 Complete radiographs during mammographic localizations	94
E193 Complete radiographs during mammographic biopsies	94
F229 Identify radiographic film artifacts	94
C147 Label or update film file envelopes or folders	89
F219 Correct radiographic film artifacts	89
F206 Complete mammography phantom tests	89
H306 Maintain sterile fields	89
G273 Clean intensifying screens	83
H301 Disinfect radiographic equipment, instruments, or supplies	83
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	83
G281 Load or unload film cassettes or magazines	78
C124 Administer pregnancy questionnaires	78
F225 Evaluate quality of film images	78
F228 Identify film quality problems, such as improper positioning or radiographic techniques	78
C167 Schedule patients for diagnostic imaging procedures	78
C160 Match radiographic films to radiographic consultation requests for doctor reviews	72
C164 Review radiographic consultation requests	72
F205 Complete mammography compression tests	72
C141 Initiate patient consent forms	72
C138 Identify films received from civilian or military medical facilities	72
F204 Complete film processing control procedures using sensitometers	67
G272 Clean automatic film processor racks	67
F215 Conduct reject or repeat analyses	67
D176 Identify and report equipment or supply problems	67
G285 Process radiographic film automatically	61
F224 Evaluate film strips using densitometers	61
H319 Prepare instruments and supplies needed for imaging	61
F231 Inspect film labelings	61
E199 Perform stereotactic breast biopsies, other than ultrasound-guided	56
H307 Monitor condition of patient during standard diagnostic	56
C168 Secure films from other medical facilities	50
C153 Maintain patient log sheets	50
I325 Determine exposure factors using radiographic technique charts or automatic exposure systems	50
C145 Key patients visit data in computers	50
F233 Maintain quality assurance procedural binders	50
G274 Conduct automatic film processor turn-on or turn-off procedures	44

TABLE A4
COMPUTED TOMOGRAPHY JOB
ST060

TASKS	PERCENT MEMBERS PERFORMING (N=32)
L439 Perform CT brain scans	100
L437 Perform CT abdominal scans	100
L440 Perform CT chest scans	100
L433 Administer IV contrast media during CT scans	100
L432 Adjust CT scanner gantries	100
L450 Perform CT paranasal sinus scans	100
L434 Calculate contrast media dosages for CT scans	100
L456 Perform CT scanner archive procedures	100
L444 Perform CT enhanced neck scans	100
L454 Perform CT routine startup or shutdown procedures	100
L445 Perform CT extremities scans	100
L446 Perform CT facial scans	100
L449 Perform CT orbital scans	100
L435 Key patient biographical information into CT scanner computers	97
L466 Record CT images on film	97
L436 Perform CT temporal bone scans	97
L455 Perform CT scan review programs by restoring data	97
L438 Perform CT axial mandible scans	94
L462 Perform CT vertebral column scans	94
L464 Perform reconstructions of CT scan images, other than three-dimensional	91
L443 Perform CT emergency computer shutdown procedures	91
L447 Perform CT multiplanar reformations	88
L452 Perform CT postarthrograms	88
L461 Perform CT three-dimensional reconstruction images	88
L458 Perform CT sella turcica scans	88
H302 Establish IV access for injections or infusions	84
H292 Adjust IV contrast media flow rate during enhanced scans	84
L460 Perform CT temporomandibular scans	84
L442 Perform CT dynamic scans	81
H309 Monitor IV injections	81
L441 Perform CT dentascans	81
L463 Perform quality control (QC) procedures on CT scanners	81
H304 Interview patients for possible contrast sensitivities	78
H308 Monitor conditions of patients during angiographies,	72
L457 Perform CT scanograms	72
L451 Perform CT pelvimetry scans	69
H313 Perform infection control procedures	69
H319 Prepare instruments and supplies needed for imaging	66
C147 Label or update film file envelopes or folders	66
C164 Review radiographic consultation requests	59
L453 Perform CT radiation therapy planning	47
L465 Produce radiation therapy treatment planning CTs	47

TABLE A5

MRI JOB
ST080

TASKS	PERCENT MEMBERS PERFORMING (N=22)
M487 Perform MR brain scans, other than pediatric brain scans	100
M513 Screen patients for metallic implants prior to MR scans	100
M498 Perform MR lumbar spine scans	100
M511 Record MR images on film	100
M515 Select radio frequency (RF) coils for exams	100
M484 Perform MR archive procedures	100
M469 Brief patients concerning MR examination and preparation procedures	100
M468 Archive MR images on electronic media	100
M475 Key patient biographical information into MR scanner computers	100
M489 Perform MR cervical spine scans	100
M473 Dock and undock magnetic resonance (MR) gantry tables	100
M467 Administer IV contrast media during MR scans	100
M495 Perform MR internal auditory canal scans	100
M504 Perform MR routine startup or shutdown procedures	100
M494 Perform MR hip scans	100
M501 Perform MR pediatric brain scans	100
M493 Perform MR gated cardiac scans	100
M514 Screen personnel entering MR scan room for metallic objects	95
M512 Retrieve archived MR images from electronic media storage	95
M470 Calculate contrast media dosages for MR scans	95
M506 Perform MR thoracic spine scans	95
M499 Perform MR neck scans	95
M483 Perform MR angiography 2D and 3D time of flight scans	95
M508 Perform MR upper-extremity scans	95
M482 Perform MR angiography 2D and 3D phase contrast scans	95
M502 Perform MR pelvic scans	95
M476 Monitor cryogen levels	95
M500 Perform MR orbit scans	95
M472 Connect respiratory and cardiac monitoring devices to patients	95
M490 Perform MR chest scans	95
M505 Perform MR spinal survey scans for metastatic diseases	91
M497 Perform MR lower-extremity scans	91
M477 Monitor MR room oxygen levels	91
M481 Perform MR abdomen scans	91
M478 Operate respiratory and cardiac monitoring devices to monitor condition of patients	91
M486 Perform MR brachial plexus scans	91
M496 Perform MR lower extremity venograms	91
M471 Complete MR quality assurance (QA) phantom scanner analyses	86
M485 Perform MR arthrogram scans	77
H308 Monitor conditions of patients during angiographies, computed tomographic (CT) scans, or magnetic resonance (MR) scans	64
H302 Establish IV access for injections or infusions	64

TABLE A6
NUCLEAR MEDICINE JOB
ST072

TASKS	PERCENT MEMBERS PERFORMING (N=49)
Q696 Perform whole body scan imagings	100
Q694 Perform thyroid imagings	100
Q662 Perform hepatobiliary imagings	100
Q647 Perform bone scan imagings, other than whole body	98
Q674 Perform pulmonary perfusion imagings	98
Q675 Perform pulmonary ventilation imagings	98
Q695 Perform thyroid uptake countings	98
Q643 Dispose of radioactive materials	98
Q665 Perform liver/spleen imagings	98
H297 Calculate nuclear medicine radiopharmaceutical doses	96
F240 Perform gamma camera daily uniformity floods	96
Q658 Perform gallium 67 tumor imagings	96
Q657 Perform gallium 67 infection imagings	96
F251 Perform nuclear medicine wipe tests	96
F239 Perform gamma camera center of rotation tests	96
Q659 Perform gastric emptying imagings	96
Q660 Perform gated blood pool imagings	94
Q680 Perform renal function imagings	94
F248 Perform nuclear medicine dose-calibrator constancy tests	94
F241 Perform gamma camera high count uniformity floods	94
H303 Interview nuclear medicine patients for possible contraindications to imagings or treatments	92
Q690 Perform thallium 201 myocardial perfusion imagings	90
Q683 Perform sestamibi myocardial perfusion imagings	90
F247 Perform nuclear medicine dose-calibrator accuracy tests	90
C124 Administer pregnancy questionnaires	90
H299 Coordinate nuclear medicine services with other departments or wards	90
Q664 Perform iodine 131 (I-131) tumor imagings	90
F243 Perform gamma camera resolution tests	90
Q687 Perform tagged red blood cell GI bleed imagings	90
Q663 Perform hyperthyroidism therapies	88
Q682 Perform Schilling's tests	88
Q666 Perform Meckel's diverticulum imagings	88
Q697 Prepare radiopharmaceutical kits	86
C167 Schedule patients for diagnostic imaging procedures	86
F242 Perform gamma camera linearity checks	86
F235 Perform area surveys or swipes	84
Q668 Perform myocardial infarct imagings	84
Q656 Perform first-pass imagings	84
F250 Perform nuclear medicine dose-calibrator linearity tests	84
Q688 Perform tagged white blood cell infection imagings	82
Q693 Perform thyroid cancer ablations	80
Q669 Perform myocardial perfusion gated SPECT imagings	78
F254 Perform pharmacologic cardiac stress tests	78

TABLE A7
ANGIOGRAPHY JOB
ST047

TASKS	PERCENT MEMBERS PERFORMING (N=16)
N539 Perform sterile tray and equipment set up procedures	100
N518 Assist in performing arch and carotid angiographies	100
N542 Set up biplane angiography equipment	100
N535 Connect respiratory and cardiac monitoring devices to patients	100
N516 Assist in performing abdominal angiographies	100
N543 Set up radiology step tables for runoff procedures	100
N521 Assist in performing extremital angiographies, such as peripheral	100
N541 Record digital angiographic procedures on film	100
N538 Perform digital subtraction angiographies	100
N517 Assist in performing angioplasties	100
N525 Assist in performing percutaneous biliary drainage procedures	100
N524 Assist in performing percutaneous abscess drainage procedures	100
N520 Assist in performing cerebral angiographies	100
N533 Assist in performing vascular stent placements	100
N519 Assist in performing biopsy procedures	100
N532 Assist in performing vascular embolization procedures	100
N536 Maintain electrical grounding of angiography equipment during angiography procedures	94
N531 Assist in performing upper extremity venographies	94
N526 Assist in performing percutaneous nephrostomies	94
N523 Assist in performing inferior vena cava filter placements	94
N529 Assist in performing renal angiographies	94
N522 Assist in performing gastrostomies or jejunostomies	94
N540 Process images using film subtraction techniques	88
N537 Operate respiratory and cardiac monitoring devices to monitor condition of patients	88
N528 Assist in performing pulmonary angiographies	88
N527 Assist in performing percutaneous stone removal procedures	88
N534 Complete magnification radiographs for angiographies	88
N530 Assist in performing thoracic angiographies	88

TABLE A8
ULTRASONOGRAPHY JOB
ST044

TASKS	PERCENT MEMBERS PERFORMING (N=37)
O581 Perform renal ultrasonographies	100
O549 Disinfect ultrasound equipment and supplies	100
O561 Perform color doppler ultrasonographies	97
O585 Perform thyroid ultrasonographies	97
O584 Perform testicular ultrasonographies	97
O548 Brief patients concerning ultrasonography examination and preparation procedures	95
O556 Perform biliary system ultrasonographies	95
O574 Perform pancreatic ultrasonographies	95
O563 Perform endovaginal ultrasonographies	95
O550 Key patient biographical information into ultrasound computers	92
O583 Perform splenic ultrasonographies	92
O554 Perform aortic ultrasonographies	92
O571 Perform obstetric ultrasonographies	89
O551 Perform abdominal wall ultrasonographies	86
O547 Assist in performing ultrasound-guided needle biopsies or drainages	86
O566 Perform hepatic ultrasonographies	84
O592 Set up equipment and supplies for ultrasonography procedures	84
O578 Perform popliteal ultrasonographies	84
O579 Perform portable ultrasonography examinations	81
O582 Perform spectral doppler ultrasonographies	76
O557 Perform breast ultrasonographies	70
O594 Write summaries of technical ultrasound exam findings	68
O559 Perform carotid ultrasonographies	68
O577 Perform peripheral vascular ultrasonographies	68
O564 Perform femoral ultrasonographies	65
O567 Perform iliac ultrasonographies	65
O593 Sterilize ultrasound transducers	62
O587 Record ultrasonography studies on film	59
O544 Adjust ultrasonography cameras	54
O586 Record ultrasonography studies on digital electronic media	43

TABLE A9
INSTRUCTOR CLUSTER
ST026

TASKS	PERCENT MEMBERS PERFORMING (N=14)
B116 Personalize lesson plans	100
B93 Administer or score tests	100
A21 Develop lesson plans	86
B97 Conduct formal course classroom training, other than OJT	86
B122 Write test questions	71
B106 Develop training materials or aids	71
B102 Counsel trainees on training progress	64
B114 Inspect training materials or aids for operation or suitability	64
B111 Evaluate progress of trainees	57
A54 Evaluate personnel for compliance with performance standards	50
B108 Establish or maintain study reference files	50
B115 Maintain training records or files	50
A16 Counsel subordinates concerning personal matters	50
B96 Complete student entry or withdrawal forms	50
B109 Evaluate effectiveness of training programs, plans, or procedures	43
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	43
B105 Develop performance tests	43
B107 Develop training programs, plans, or procedures	43
B95 Brief organizational personnel concerning training programs or matters	43
B110 Evaluate personnel to determine training needs	43
A65 Inspect personnel for compliance with military standards	36
A10 Conduct supervisory performance feedback sessions	36
A35 Direct training functions	36
B104 Develop formal course curricula, plans of instructions (POIs), or specialty training standards (STSs)	29
A86 Supervise military personnel	29
B117 Plan or schedule training	29
C154 Maintain personnel dosimetry program	21
G290 Test silver recovery units	7

TABLE A10
LOGISTICS AND SUPPLY JOB
ST155

TASKS	PERCENT MEMBERS PERFORMING (N=5)
D173 Coordinate supply-related matters with appropriate agencies	100
D191 Store equipment, tools, parts, or supplies	100
D179 Initiate letters of justification for supply-related matters	100
D182 Inventory equipment, tools, parts, or supplies	100
D186 Maintain medical supply shopping guides	100
A69 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	100
A12 Coordinate orders or requests with facility management personnel	100
D190 Research information in supply catalogs or indexes	80
D176 Identify and report equipment or supply problems	80
D181 Initiate requisitions for equipment, tools, parts, or supplies	80
A52 Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	80
D178 Initiate documentation to turn in excess or surplus property	80
D189 Pick up or deliver equipment, tools, parts, or supplies	80
A51 Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	80
C130 Create computerized reports, such as spreadsheet analyses	80
D183 Issue or log turn-ins of equipment, tools, parts, or supplies	80
D184 Maintain benchstock parts or equipment levels	60
D187 Maintain organizational equipment or supply records, such as custodian authorization/ custody receipt listings (CA/CRLs)	60
A17 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	60
D175 Evaluate serviceability of equipment, tools, parts, or supplies	60
A86 Supervise military personnel	60